

## ELECTRICAL USE IN THE HOME

### LIGHTING:

#### FIXTURES:

CEILING  
WALL & CABINET  
BUILT-IN

#### PORTABLE LAMPS:

TABLE & FLOOR  
WALL, DRESSER & BED  
DECORATIVE & NIGHT

### EDUCATION AND RECREATION:

RADIO & TELEVISION  
PHONOGRAPH, RECORD CHANGER  
WORKSHOP TOOLS

HOME MOVIES  
PHOTOGRAPHIC EQUIPMENT  
ELECTRICAL TOYS

### HEALTH AND GROOMING:

ULTRA-VIOLET )  
INFRA-RED ) LAMPS  
GERMICIDAL )

VAPORIZER, VIBRATOR  
SHAVER, HAIR DRIER  
HEATING PAD, BLANKET

### FOOD PREPARATION, SERVING & STORING:

#### REFRIGERATION:

HOUSEHOLD  
HOME FREEZER  
REACH-IN OR WALK-IN  
MIXER, SEPARATOR & CHURN

RANGE, HOTPLATE, ROASTER  
APPLIANCES FOR MAKING:  
COFFEE, TOAST, WAFFLES,  
OTHER DISHES  
DISHWASHER

### LAUNDRY, CLEANING, GENERAL HOUSEWORK, ETC:

WASHING MACHINE  
CLOTHES DRIER  
IRON  
IRONER  
SEWING MACHINE

VACUUM CLEANER  
FLOOR POLISHER  
PEST EXTERMINATORS  
CLOCK  
DOORBELL

### RUNNING WATER:

PRESSURE WATER SYSTEM  
PLUMBING  
WATER SOFTENER  
WATER HEATER

### HEATING & COOLING:

PORTABLE HEATERS  
HOUSE-HEATING EQUIPMENT  
FANS, ROOM COOLERS  
FILTER, HUMIDIFIER

USDA-REA

AUG 2 1947



# COMMON WATTAGES OF ELECTRIC HOUSEHOLD EQUIPMENT

2 - 10	75 - 100	200 - 300	300 - 400	500 - 700
Clock Shaver	Mixer Radio Sewing machine Fan Heating pad	Blanket Furnace (Automatic control and fan) Washer Refrigerator Vacuum cleaner	Washer Refrigerator Vacuum cleaner Freezer Sun lamp	Coffee maker Freezer Dish washer Radio (Television) Room cooler

1000	1320 - 1650	2000	2400 - 4500	6600 - 12,000
Iron Toaster Coffee maker Waffle baker Hotplate Heater Grill	Roaster Ironer	Hotplate	Water heater Clothes driver	Range

## AVERAGE KWH CONSUMPTION PER MONTH

<u>Equipment</u>	<u>KWH</u>	<u>Equipment</u>	<u>KWH</u>
Clock	2	Radio	8
Coffee maker	5	Range	100
Dish washer	2 $\frac{1}{2}$	Refrigerator	30
Fan (household)	2	Roaster	40
Fan (kitchen)	8	Sewing machine	1 $\frac{1}{2}$
Freezer (20 cu. ft.)	125	Toaster	3
Iron	5	Vacuum cleaner	2
Ironer	10	Waffle baker	2
Lighting	25	Washing machine	3
Mixer	1 $\frac{1}{2}$	Water heater	240



# MAIN POINTS TO CONSIDER WHEN ELECTRIFYING THE RURAL HOME

(Equipment is listed in the approximate order of purchase usually considered desirable; actual order varies according to family needs and amount of money family has to spend)

**WIRING:** Good wiring is the foundation of good electric service in the home. Plan to have:

*Enough circuits of right size wire:* Kitchen, dining room and laundry should have enough appliance outlets on appliance circuits, which have larger than #14 wire, to provide for full use of high-wattage equipment now and in the future. The wire sizes shall be #12 or #10, occasionally for heavy-duty equipment #8, and for the range three #6 wires. General purpose circuits serve fixed lights, portable lamps, radios, cleaners, small fans and similar low-wattage equipment.

*Enough outlets, lights and switches:* Since appliances and lamp cords are usually 6' long, provide a convenience outlet for about every 12' of space around the wall or for any shorter usable wall space; never have less than two in a room. Place workroom convenience outlets and all switches about 40" above the floor; outlets in other rooms may be 13" above the floor or in the baseboard. An outlet in a switch plate provides an extra place at a convenient height for plugging in a vacuum cleaner. Have 3-way and 4-way switches at most used entrances, so that lights can be controlled without retracing steps. \*T-rated switches are desirable; mercury switches are quiet. On light walls ivory switches, outlets and plates are preferable.

*Adequate entrance for electric service:* The service entrance for maximum use should be not less than three #6 wires. This 3-wire service provides 120/240 volts.

**LIGHTING:** No bare bulbs should be used in the home except in closets and unused parts of attics and basements and possibly, in the case of fluorescent tubes, in places where used briefly or placed out of line of vision, such as at bath and bedroom mirrors or under kitchen cabinets. For good lighting, we need:

- |  |  |
|--|--|
| 1. <i>Enough light:</i> .....                      | Light can be measured in footcandles       |
| <i>Large enough lamp bulbs:</i> .....              | Use size suggested for equipment bought    |
| <i>In enough places and well-located:</i> .....    | There should be no shadow on work          |
| <i>With good surrounding equipment:</i> .....      | Light colors, dull finishes are best       |
| 2. <i>Light of good quality:</i> .....             | Brightness is measured in footlamberts     |
| <i>Softly diffused and well-shaded:</i> .....      | Use white bowls, white shade linings       |
| <i>Pleasing in color and brightness:</i> .....     | Avoid glare, shadow and spotty diffusion   |
| 3. <i>Well-balanced distribution:</i> .....        | Ceiling fixtures provide this economically |
| <i>General lighting should be at least:</i> .....  | There should not be a notable contrast     |
| <i>1/10 of local lighting on close work:</i> ..... | between light on work and light in room    |

Ceiling fixture diameter should correspond in inches with width of room in feet. Wattage of incandescent bulbs in single-bulb fixtures corresponds with fixture diameter as follows: 3½" - 40w.; 4", 5", 6", 7", - 60 or 40w.; 8", 9", - 75w.; 10", - 100w.; 12", - 150w.; 14", - 200w.; Multiple-bulb fixtures require higher wattages to give the same amount of light. In lamps, bulb size corresponds with diffusing bowl diameter, and, because shaded, bulb wattage can be higher than in fixtures of same diameter, IES-type bowl: 6" - 75w.; 8" - 100w.; 9-3/8" - 150w.; 10" uses 100-200-300w. CLM-type: 7" bowl uses 50-100-150 w.; and the 9" type, 100-200-300w.

Buy simple, inconspicuous fixtures and put more money in portable lamps, if money is limited. Fluorescent tubes give two to three times as much light as incandescent or filament bulbs of the same wattage. They are also cooler, give a whiter light lower in brightness, and last longer. Some fixtures and lamps carry certification tags indicating quality. Among these are the AHII (American Home Lighting Institute) tag for fixtures, and the CLM (Certified Lamp Makers) tag for portable lamps. Use size bulb specified in equipment. Keep equipment clean.

**RADIO:** 6-tube, table model without push-button tuning is usually best buy in low-cost radio. Larger size table or console models reproduce sound better.

- \* **IRONING EQUIPMENT:** Recommended—automatic, 2½ - 4lbs., 1000w., permanently attached cord, large sole plate. Steam iron is for pressing woollens, silks; less useful in ironing cotton-linen wash. In ironing come later in the buying plan. It saves time and permits sitting throughout ironing. Table models, or floor models without cabinet covers, in lower price bracket, do satisfactory job. Thermostatic control is essential.

**ELECTRIC WATER SYSTEM:** Place high in buying plan. Running water ranks first in time and energy saving. Provide water for kitchen, laundry, bath, garden, poultry, and livestock. Install system large enough to meet the needs. For example, 3/4" garden hose will handle about 300 gal. per hr. Small pipe limits usefulness of an otherwise adequate system. A good water system requires a good well. The well should be curbed to prevent contamination. Health authorities will usually test water to find what organisms it contains.



WASHER: Cost range is - wringer, \$50-100; spinner, \$125-150; automatic, \$150-250. Wringer type- usually 8 or 9 lb. size with easy-acting bar release or automatic one on wringer; consider value of pump, at additional cost of \$10, for draining water when lacking floor drain. Spinner type- some have safety feature making accident with spinning basket impossible. Automatic type- agitator type has stronger washing action than cylinder; requires adequate supply hot and cold running water under pressure and adequate drain facilities; some have means of holding water for use again, also of adding clothes during cycle. Evaluate time and energy saving values, safety features, relative cost of all types of washers.

REFRIGERATION EQUIPMENT: A household refrigerator should be large enough, preferably 7 cu. ft. for two persons, larger for more. Its door should open toward the work-space. Weigh special features against extra cost; plan for storing frozen food, quantities of milk, eggs. Know how you will solve quantity freezing and storage of food: by locker plant, home freezer, walk-in? Home freezer: at least 5 cu. ft. per person for freezing and storing; freezing compartment separate from and not over 1/10 of freezing and storage space; reliable maker, reputable dealer extremely important.

SMALL APPLIANCES: Chromium-plated finishes and thermostatic controls are desirable on small cooking appliances; higher wattage (around 1000w.) speeds cooking. Buy a coffee-maker or toaster first; perhaps a combination wafflebaker and sandwich toaster later. Mixer is very useful; don't buy inexpensive one or whipper; secure sturdy equipment in \$20 to \$30 bracket, or up.

VACUUM CLEANER: Upright cleaners using brushes, agitation and suction usually remove more deeply-imbedded dirt than do straight suction cleaners, which come in either tank or upright models. Upright cleaners of either type have nozzle height adjustment devices which listed in order of convenience in use are: automatic adjuster, foot operated and hand operated adjuster. Factory-rebuilt equipment offers saving in purchase price.

HOTPLATE: Recommended---1000w. or higher, 3-speed switch, durable finish. Some have range units.

ROASTER: Rectangular shape; thermostatic control; glass or earthenware dishes can go directly to table. Note: Cost of good hotplate and roaster is 1/3 to 1/2 the cost of a range.

RANGE: Full-size preferable, but apartment-size can do job. Evaluate special features against their cost (a \$15 to \$20 timer clock, if not used as a timer for cooking, makes a rather expensive timepiece.) Look at stripped models: they have same units, sameovens as more expensive models. Weigh conveniences of extra features against having another piece of equipment like a mixer. Consider water-heating problem; use range boiler or electric heater. Consider kitchen heating problem: use separate heater matching range and burning wood, coal, or gas, with coils through firebox for heating water, using old range boiler.

ELECTRIC WATER HEATER: Homes with running water-consult power supplier for possible special low electric rates on certain types of electric storage heaters. Use heater with large tank-60 or 80 gallon size is needed on many farms. Homes without running water might use 2-10 gallon pin-up displacement type. Electric teakettle is useful in many cases; type with automatic cut-off is preferable.

CLOTHES DRYER: Rotary tumbler type or cabinet models are available. Higher wattage dryer gives more rapid drying; look for time and temperature controls.

INCOME-PRODUCING FARM EQUIPMENT: Consider garden watering, chick brooder, poultry house lighting, water-warmers, pig brooder portable motor, feedgrinder, milking machine and other productive uses early in electrification plan. They can help to pay wiring, lighting and equipment costs and monthly bill.



# ELECTRICAL TEACHING AIDS

- The following posters and charts may be helpful in giving instruction in power use and related subjects:
- |  | Price | Price   |
|--|-------|---|
| BENDIX HOME LAUNDRY INSTITUTE,<br>South Bend, Indiana.   |       |   |
| Six Steps in Laundry Planning,<br>Two-color chart, 22x17.....Free<br>(Suitable for use with homemaking classes)  |       | 12x17; also a multi-heat control demonstrator.....Free<br>(These are of use primarily to college household equipment classes)   |
| CARRIER CORPORATION,<br>Advertising Department,<br>300 South Geddes Street,<br>Syracuse, New York.   |       | NATIONAL ADEQUATE WIRING BUREAU,<br>155 East 44th Street,<br>New York 17, N. Y.   |
| Cut-out Display Card of 30 cu. ft. upright<br>freezer with folding doors which open to<br>show interior view, black and white, 20x21...\$1.00<br>(Suitable for use with adult groups)  |       | * Electrical Guide to the post-war Home<br>19-page, black and white lecture charts.<br>22x34, bound together at top by wood<br>moulding..... 5.00<br>(Homemaking, shop and household equipment<br>classes; small groups of adults)  |
| COCA-COLA BOTTLING COMPANY,<br>Atlanta, Georgia, or Local<br>Coca-Cola Bottling Works  |       | * Wiring Demonstration Chart<br>25x39, black and white, basement and first<br>floor of house on cork background with<br>colored thumb tacks..... 3.50   |
| Our America - Electricity A Modern Power<br>A series of five full color charts with<br>Teacher and student bulletins.....Free<br>Chart 1 Production, 32x22<br>Chart 2 Transmission, 32x22<br>Chart 3 Uses, 32x22<br>Chart 4 Future, 32x22<br>Electricity, 11x16<br>(Grade school classes)  |       | * Practice plans for audience participation<br>for use with above chart;<br>100 sets of two sheets each.....50<br>(Homemaking, shop and household equipment<br>classes; small groups of adults)   |
| GENERAL ELECTRIC COMPANY,<br>Nela Park, Cleveland, Ohio  |       | * Educational Wall Chart on Electrical Homemaking<br>Three-color chart, 21x33, printed on both<br>sides; for use with four study projects;<br>One side shows the completed kitchens<br>and laundry plans;<br>The other shows the electrical system for<br>two identical homes - one planned, the<br>other unplanned.<br>One copy sent free to teachers.....25 |
| * New Story of Light,<br>Set of 2 charts in two colors and printed on<br>both sides, 26x40<br>Limited number free from GE distributor,<br>Cost per set..... 35<br>Chart 1, How Our Homes Are Lighted;<br>History of Lighting<br>Chart 2, How the World is Lighted<br>Chart 3, Lighting and Seeing for Health<br>and safety<br>Chart 4, Lighting for Seeing<br>(Grade School History, social science and<br>geography classes; homemaking, general<br>science, and physics classes) |       | NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION,<br>155 East 44th Street,<br>New York 17, N. Y.   |
| * Pictorial Summary of Light,<br>1 chart in two colors, 26x36.....Free<br>(General Science, physics, household<br>equipment classes)   |       | Poster on the electric range is no longer<br>available.<br>This group maintains a visual aids service<br>and distributes information about new<br>materials.  |
| IOWA STATE COLLEGE,<br>Extension Service, Ames, Iowa   |       | SEARS, ROEBUCK & CO.,<br>Consumer Education Division, Chicago, Illinois   |
| Wiring Layout Charts,<br>7 Charts in black and white, 43x35, showing<br>the farmstead layout, the house and other<br>farm buildings.....3.00   |       | Lighting Exhibit,<br>Includes 3 black and white charts, approximately<br>24x30. Free for loan; return postage must be<br>paid.....Free<br>(Homemaking and household equipment<br>classes; small groups of adults)   |
| LANDERS, FRARY AND CLARK<br>New Britain, Connecticut   |       | Freezing Exhibit;<br>Includes packaging materials commonly used,<br>with prices, dimensions and uses.<br>Free for loan; return postage must be paid..Free<br>(Homemaking and household equipment classes;<br>small adult groups)  |
| Multi-Heat Control Chart,  |       | NOTE: Wiring display boards are sometimes available<br>from local Sears stores.)  |



# ELECTRICAL TEACHING AIDS (continued)

SUPERINTENDENT OF DOCUMENTS,  
Government Printing Office,  
Washington, D. C.

\* Make your Equipment Last,  
10 posters in black and white, 14x20  
per cent..... .50  
(Bulletin board displays for homemaking classes  
adult homemakers)

\* Make your Rubber Last,  
5 posters in black and white, 14x20  
per cent..... .10  
(Bulletin board displays for homemaking classes  
adult homemakers)

UNITED STATES RUBBER COMPANY,  
1230 Avenue of the Americas,  
Rockefeller Center, New York 20, N. Y.  
New Code Changes Show Progress in Branch Circuit  
Wiring,  
1 poster black and white, 14x22..... Free  
(Shop and household equipment classes)

WESTINGHOUSE ELECTRIC CORPORATION,  
306 Fourth Avenue,  
Pittsburgh 30, Pennsylvania  
\* Everyday Electricity,  
9 charts in two colors, 25x38, explaining  
principles of operation of common electrical  
devices,.....per set..... 1.00

Chart 1 The Incandescent Lamp  
Chart 2 The Electric Toaster  
Chart 3 The Electric Motor  
Chart 4 The Vacuum Cleaner  
Chart 5 The Electric Refrigerator  
Chart 6 The Fluorescent Lamp  
Chart 7 The Electric Iron  
Chart 8 The Electric Percolator  
Chart 9 The Electric Elevator

(Homemaking, household equipment, general  
science, and physics classes)

\* The Entire Electromagnetic Spectrum,  
1 full-color chart, 40x30, showing all major  
spectrum bands, a glossary of spectral  
terms..... 2.00

(For physics, radio communications and electrical  
theory classes)

\* The Waterwheel Generator,  
Full-color wall chart, 25x36,..... 2.00  
(Vocational training, general science, and physics  
classes)

Pictorial Bulletins,

Two-color photographic posters on up-to-date  
scientific and industrial themes, 14x17,  
mailed regularly twice a month during school year  
..... Free  
(General science, and physics classes)

\* Picture of poster can be secured free by writing.

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February, 1947